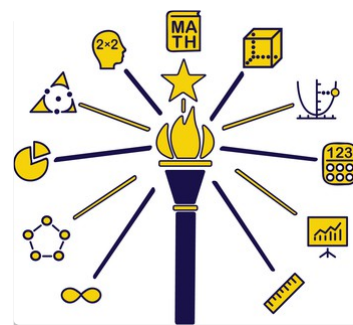


#INspirEDmath

September 2018, Volume 3

Setting goals to focus learning!

One of our goals for the math team at the Indiana Department of Education (IDOE) is to provide relevant, meaningful, and realistic support to the field in a variety of ways. We have worked hard to align our message within our team and among our community of practice and will continue to do so.



Our work is driven by NCTM's publication, *Principles to Action: Ensuring Mathematical Success for All*, which encourages high leverage practices to promote deep learning. Each month, throughout the course of the 2018-2019 school year, we will highlight one of The Eight Effective Teaching Practices laid forth in the text.

A Question, Waiting to be Answered

<https://youtu.be/W1K2jdjLhbo>





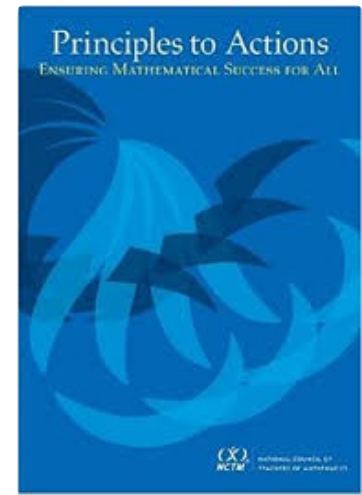
Problem of the Month!

Challenge your students to work in three dimensions using different representations of the cube. The task is easy enough to explain but not so easy to solve! By using the cubes (or the online interactive tool) we hope students will become so absorbed that they are *willing* to think logically, work systematically and persevere.

Click [here](#) for tips to start the flow of thinking, solution strategies, extension activities, modifications, and amazing higher order thinking questions!

September's Focus: Practice #1

1. **Establishing mathematics goals to focus learning**
2. Implement tasks that promote reasoning and problems solving
3. Use and connect mathematical representations
4. Facilitate meaningful discourse
5. Pose purposeful questions
6. Build procedural fluency from conceptual understanding
7. Support productive struggle in learning mathematics
8. Elicit and use evidence of student thinking.



Establish Mathematics Goals to Focus Learning

Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.

Call them goals, objectives, generalizations, learning targets, or focus. The name is not as important as the intention. Learning targets are summaries of thoughts and overriding ideas that we want our students to know and understand before, during, and after a lesson. When writing your goals, look for these high leverage qualities summarized here:

1. Goals are clear and articulate the mathematics that students are learning within a single lesson, over multiple lessons, or throughout a unit.
2. Recognizing how the goals fit within the learning progression. (Check out our updated resource guides to help with vertical articulation!)
3. Focuses on goals that are attainable in short periods of time and are explicitly stated throughout the lesson to focus student work.
4. Establishes long term goals separate from daily or short term goals.
5. Goals guide planning and decision-making within and following instruction.

MATH.

The only place where people can buy 64 Watermelons and no one wonders why...

Crafting Math Goals to Focus Student Learning

Here are three progressions to write learning goals the achieve that critical understanding we all long for:

1. Students will understand that...
2. How or why?
3. So What? What is the significance or effect?

The following is a pathway to focus *teacher* understanding and effort. To deepen our own understanding around establishing mathematics goals we need to:

- Anticipate
- Connect to prior knowledge
- Explain the goals to students
- Teach students to use the goals to self-assess

I can establish mathematics goals to focus learning. #NCTMP2A - 1

Level 4:
I can teach learners to use established mathematical goals to self-assess and level up.

Level 3:
I can establish mathematics goals to focus learning.

Level 2:
I can connect the mathematics goals to prior learning standards and strategies.

Level 1:
I can "do the math" as a learner to notice and note needed prerequisite skills and anticipate learning obstacles.

Continuously working to reach our goals!

We continue to update our resource pages to align with our message of high leverage practices to promote deep learning. Here is what we have accomplished so far:

- Hyperlinked each [course title](#) - This will take you to our digital resources such as lesson ideas and tasks. We are always adding to these documents so check back often. Please share your ideas and experiences with us. You are the experts after all!

Indiana PROGRAMS DIRECTORY

only for support and possible examples that relate to the standards.

Course Title & Digital Resources	2014 Standards Updated Fall 2017	Correlation Guide Updated Fall 2017	Resource Guide Updated Fall 2017
Kindergarten	PDE 11 Wood 41	PDE 11	PDE 11
Grade 1	PDE 11 Wood 41	PDE 11	PDE 11
Grade 2	PDE 11 Wood 41	PDE 11	PDE 11
Grade 3	PDE 11 Wood 41	PDE 11	PDE 11
Grade 4	PDE 11 Wood 41	PDE 11	PDE 11
Grade 5	PDE 11 Wood 41	PDE 11	PDE 11
Grade 6	PDE 11 Wood 41	PDE 11	PDE 11
Grade 7	PDE 11 Wood 41	PDE 11	PDE 11
Grade 8	PDE 11 Wood 41	PDE 11	PDE 11
Algebra I	PDE 11 Wood 41	PDE 11	PDE 11
Math 32	PDE 11 Wood 41	PDE 11	PDE 11
Algebra II	PDE 11 Wood 41	PDE 11	PDE 11
Calculus	PDE 11 Wood 41	PDE 11	PDE 11
Finite	PDE 11 Wood 41	PDE 11	PDE 11
Geometry	PDE 11 Wood 41	PDE 11	PDE 11
Pre-Calculus	PDE 11 Wood 41	PDE 11	PDE 11
Probability and Statistics	PDE 11 Wood 41	PDE 11	PDE 11

- Updated resource guides - The "Example" column has been removed, as we felt it was to limiting. Success criteria has been added. This is where we unpack the standard with student-friendly "I can" statements. We have also added the vertical articulation with "Looking Back" and "Looking Ahead" columns. The math team thought it was important to know how the standard had been addressed in prior math courses and how it will be used in future ones. We anticipate grades 3-8 and Algebra 1 will be updated on our website by October 1 with the rest to follow shortly thereafter!

Upcoming Events!



2018 ICTM Fall Conference

November 4 and 5, at the Marriott East in Indianapolis

[Registration](#) and [speaker proposals](#) are now open!

"Find Your Way:

Mathematics as a GPS"

Explore topics such as:

- Student engagement in meaningful learning
- Access, equity, and empowerment
- Becoming a more effective instructional coach
- Using the new state assessments to increase student learning



Indiana Connected Educators (ICE) 2018 Conference

October 11 and 12, Noblesville High School, Noblesville

[Registration](#) is open!

This year's conference focuses on VOICES. You will be offered an experience that celebrates teacher voice, empowers student voice, and explores the opportunities that exist to amplify new and under-represented voices. Imagine the power that can be generated when students, teachers, media specialists, coaches, administrators, and community are brought together to learn with one another.



Assessment Literacy Professional Development

Various dates and locations available

[Registration](#) is open!

Join the Offices of Assessment and School Improvement for [free](#) professional development targeting strong practices in classroom assessment!

Bring your own classroom assessment(s) to work through strategies for evaluating and improving data collection. Assessment and School Improvement staff will share best practices and facilitate discussions in small working groups

Spotlight - DOE's Secondary Mathematics Specialist

My name is Robin Conti. I was a classroom teacher for 15 years before falling in love with my role at the IDOE. My career began in an alternative public school serving grades 6-12 in Cleveland, Ohio. From

there, I moved to Atlanta, Georgia, with my husband where I taught 8th grade math and gifted and accelerated 8th grade math in a traditional middle school, followed by a year in a local high school. Eight years ago we moved our family to Indiana where I spent 7 years at Noblesville High School. I have taught remedial courses, gifted/accelerated courses, dual credit courses, traditional curriculum, and integrated curriculum. My wide variety of experience gives me the ability to put myself in the shoes of Indiana educators when providing guidance, resources, and professional development.



I am passionate about supporting our amazing educators to be the absolute best they can be. I am a believer in risk-taking in the classroom, laughing at one's self when things don't go as planned, and doing what feels best for students even if it is not trendy!

I have enjoyed getting to know some of our fabulous math educators already and can not wait to get to know more!





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